AF/GP1721 $

Docket: 318.6505 USU

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants/Appellants:	M. J. Grundy et al.	)	
Serial No.:	09/040,911	)	Group No.: 1721
Filing Date:	March 18, 1998	)	Examiner: M. Medley
Title:	FUEL OIL COMPOSITION	)	
		)	

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Paul D. Greeley
Name of Applicants, assignee, or Registered Rep.
Signature

Assistant Commissioner for
Patents
Washington, DC 20231

APPEAL BRIEF TRANSMITTAL LETTER

Dear Sir:

Attached hereto is Appellants' Appeal Brief, in triplicate, and a check in the amount of $300.00 to cover the requisite fee under 37 CFR 1.17(f) for filing said Brief in furtherance of the Notice of Appeal filed in this Application.

Respectfully submitted,

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Date: January 7, 2000

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CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner of Patents and Trademarks, Washington, DC 20231.

Paul D. Greeley
(Typed or printed name of person mailing paper)

Date: January 17, 2000

Paul D. Greeley
(Signature of person mailing paper)

Assistant Commissioner for Patents
Washington, DC 20231

APPELLANTS' APPEAL BRIEF

Dear Sir:

This is an appeal from the Final Rejection of Claims 1 to 17 by the Primary Examiner in Group Art Unit 1721 on May 19, 1999.

Jurisdiction of this appeal results in the Board of Patent Appeals and Interferences under the provisions of Section 134, Title 35, United States Code, by way of a Notice of Appeal and requisite fee mailed to the USPTO with Certificate of Mailing on November 19, 1999.

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

(1) REAL PARTY IN INTEREST

The real party in interest is Infineum Ltd. (UK).

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

(3) STATUS OF CLAIMS

All the claims in the application, namely Claims 1 to 17, stand finally rejected. A copy of the claims appears in the Appendix to this Appeal Brief.

(4) STATUS OF AMENDMENTS FILED SUBSEQUENT TO FINAL REJECTION

No amendments were filed subsequent to the Final Rejection.

(5) SUMMARY OF THE INVENTION

The invention relates to middle distillate fuel oil compositions of low sulfur content (0.05% wt or less) that possess superior enhanced engine and injector cleanliness due to the presence in the low sulfur fuel oil of a particular dispersant additive.

Enhanced engine and injector cleanliness results from reducing or removing deposits in the intake system or combustion chamber surfaces of spark-ignition engines or reducing or preventing nozzle fouling in compression-ignition engines.

The present invention is concerned with dispersant additives which provide superior injector cleanliness when incorporated in low sulfur middle distillate fuels. Environmental concerns have led to the need to provide fuels of considerably reduced sulfur content. The refining processes for providing the desired reduction down to not more than 0.05% by weight of sulfur not only reduce the sulfur content of the fuel, but also change the overall chemical composition of the fuel because, in addition to removal of

sulfur, other compounds, occurring naturally in the fuel, such as polycyclic compounds and polar compounds, are also removed or reduced. These modified fuels behave differently in use by virtue of the removal of these adventitiously beneficial impurities, and there is a need to develop additive compositions which provide an effective level of properties in these low sulfur fuels. For example, page 23, Table 23 of the present application shows that the use of a previously recommended dispersant for high sulfur fuels gives a significantly worse Fouling Index when employed in a low sulfur fuel. Thus, Examples Comp I and Comp II (which use a fuel with only 0.0375% sulfur and the previously recommended dispersant identified as Comp A) show worse Fouling Index than when the same dispersant is used in a high sulfur (0.18%) fuel (Comp V and Comp VI).

The particular dispersant additive of the present invention and claims under appeal are of a very restricted nature in terms of: (a) ratio of components used to form the dispersant, (b) molecular weight, and (c) the nature of the amine used to provide amine functionality. The dispersant is the reaction product of **4:3 to 1:10 molar ratio (i.e., a ratio of 1.3 to 0.1)** of:

(a) a polyalkenyl derivative of a monoethylenically unsaturated C_4-C_{10} dicarboxylic acid material in **which the number average molecular weight of the polyalkenyl chain is in the range of 850 to 1150** with

(b) a polyamine of the **formula $H_2N(CH_2)_m$-$[NH(CH_2)_m]_nNH_2$ where m is 2 to 4 and n is 1 to 6**.

The superior cleanliness properties of the novel fuel oil compositions of this invention are demonstrated by the Fouling Index (FI).

The Fouling Index was generated from measurements of air flow through the injector nozzles, assessments being made on the new nozzles before the test (Flow Clean), and afterwards on the fouled nozzles (Flow Fouled). Air flow was measured in a Ricardo air-flow rig according to ISO 4010, measurements being recorded at needle lifts of 0.1, 0.2 and 0.3 mm, with a vacuum pressure 600 mBar (60,000 Pa).

Build up of deposits in the nozzles causes a reduction in measured air flow, and degree of nozzle fouling (F) was calculated as follows:

$$F = \frac{\text{Flow Clean - Flow Fouled}}{\text{Flow Clean}} \times 100$$

A fouling number for one nozzle was calculated by averaging the three values of F obtained at the three different needle lifts. The Fouling Index (FI) was obtained by averaging the fouling numbers from all four nozzles.

Claims 1 to 14 are drawn to the novel low sulfur content fuel oil compositions with the aforementioned dispersant additive, Claims 15 and 16 to a process for preparing such compositions and Claim 17 to a process of operating a compression-ignition engine by introducing the novel fuel oil compositions into the combustion chamber of such an engine.

(6) ISSUES

The sole issue presented for appellate determination by way of this appeal is the propriety of the Final Rejection of Claims 1 to 17 for obviousness under 35 U.S.C. 103 over the disclosure in WO 94/20593 or WO 96/23855 or Hart et al. US Patent No. 5,833,721.

(7) GROUPING OF THE CLAIMS

Claims 1 to 17 stand or fall together.

(8) ARGUMENTS

PTO'S POSITION

The USPTO's rejection of Claims 1 to 17 over the three cited reference documents is set forth in the December 18, 1998 Office Action and is as follows.

"Each of the above prior art references teach a composition comprising a liquid hydrocarbon middle distillate fuel oil having a sulphur concentration within the same range as in the instant claims and a succinimide dispersant additive. Note especially Table I of the 20593 reference, page 4 last paragraph of the 23855 reference and col. 9 lines 53 to 60 for teaching of low sulfur content fuel oil. See claim 9 of 23855, claims 11 and 12 of 20593 and col. 5 lines 42 to col. 6 line 50 for teaching of the polyalkenyl derivation of dicarboxylic acid **of the same nature as the instant claims**. The molar ratio of said dicarboxylic acid derivative to polyamine overlaps that as recited in the claims. It is the Examiner's position that the instant claims would be prima facie obvious in view of these references. One of ordinary skill in the art would be motivated to add an ashless dispersant of the claimed type to a low sulfur content distillate fuel oil to obtain a fuel oil which enhances engine cleanliness because the prior art teaches low emission fuel oils are obtained by adding **the same type** of ashless dispersant to low sulfur containing fuel oils. It is unobvious to follow the teaching of the prior art." (Emphasis added)

The Final Rejection of May 19, 1999 merely maintains this rejection with the following statement.

"Applicants' arguments have been reviewed and considered but arguments unsupported by factual evidence do not take the place of objective evidence of obviousness. Applicants have not drafted the claims in a manner to be within the scope argumented and supported by the experimental data of record relied on showing the results presented therein. The claims as drafted do not exclude the teachings of WO 94/20593 or WO 96/23855 or Hart et al. (5,833,721)."

ARGUMENT 1. THE PRIOR ART REFERENCES NEITHER DISCLOSE NOR TEACH THE CLAIMED INVENTION

As stated in Graham v. John Deere Co., 383 US 1, 17, 148 USPQ 459, 467 (1966), the determination of obviousness is based on the following factual inquiries:

(a) the scope and content of the prior art;

(b) the differences between the prior art and the claims at issue;

(c) the level of ordinary skill in the art; and

(d) objective evidence of unobviousness.

The scope and content of the cited prior art and the differences between the prior art and the claims at issue are as follows.

WO 94/20593 relates to a fuel composition having reduced emissions which comprises a low boiling fuel (which is not the middle distillate fuel of the present invention) and an additive package comprising a combination of a detergent, a friction reducing additive and a cetane number improver. The detergent proposed is a polyalkenyl bis-succinimide produced from a polybutenyl succinic anhydride and tetraethylene pentamine **in a molar ratio of 2:1**, and **wherein the molecular weight of the polybutenyl is 1200. This detergent material differs from the dispersant of the present invention in respect of both reactant ratio and molecular weight requirement of the invention, namely a molar ratio of from 1.33 to 0.1 and a molecular weight of from 850 to 1150.**

The comparative data of the present invention also shows that if such a dispersant of the prior art reference was used for the purpose of attempting to improve injector cleanliness (even though WO 94/20593 doesn't teach its use for this purpose), it would be considerably less effective than the dispersants of the invention. Furthermore, the WO 94/20593 disclosure provides no motivation whatsoever for changing the composition of dispersant described therein to that of the present invention for the different purpose of obtaining improved injector cleanliness.

WO 96/23855 describes an additive composition of improved lubricity comprising an ashless dispersant comprising an acylated nitrogen compound and a lubricity enhancer which is selected from a carboxylic acid, an ester of a carboxylic acid and an alcohol wherein the acid has from 2 to 50 carbon atoms and the alcohol has one or more carbon atoms, for the purpose of improving the lubricity of a low sulfur fuel. WO

96/23855 describes a wide variety of acylated nitrogen compounds known in the art. No guidance is given as to any preferred molar ratios of polyalkenyl compound to amine compound, apart from the reference to a particular compound in the Examples of this cited document. The only molar ratio disclosed is that at page 16, lines 8 to 15 as being the reaction product of 1.5 equivalents of polyisobutyl succinic anhydride of molecular weight 950 and one equivalent of polyamine approximating to pentaethylene hexamine. **This prior art dispersant material differs from the dispersant of the present invention in the molar ratio of 1.5 for the prior art dispersant and a molar ratio of 1.33 to 0.1 for the present invention.**

US Patent No. 5,833,721 describes additives for making **antifoam agents** more suitable for use in hydrocarbon oils. The additives are nitrogen-containing compounds, which may be ashless dispersants. The ashless dispersants are broadly described in essentially the same terms used in WO 96/23855. There is no preference given as to molar ratios of alkenyl compound to amine compound. The nitrogen compound used in the exemplification at column 20, lines 5 to 14 is also similar to that used in WO 96/23855, with the exception that the anhydride and amine are used in a ratio of 1.4 to 1 equivalents, as opposed to 1.5 to 1 in WO 96/23855. Again, this differs from the required molar ratio of from 1.33 to 0.1 for the present invention.

No evidence of any other level of skill of one ordinarily skilled person in the art is relied upon.

In order for the USPTO to apply a rejection under 35 U.S.C. 103, the prior art itself must suggest the modification or provide the reason or motivation for making such modification. In re Laskowski, 871 F.2d 115, 117, 10 USPQ 2d 1397, 1398-99 (Fed. Cir. 1989). "The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made." Sensonics Inc. v. Aerosonic Corp., 81 F.3d 1566, 38 USPQ 2d 1551, 1554 (Fed. Cir. 1996), citing Interconnect Planning Corp. v. Feil, 774, F.2d 1132, 1138, 227 USPQ 543, 547 (Fed. Cir. 1985). Comparison between the compositions and

their properties taught in the prior art and those of an Applicants' claimed invention must include consideration of the problem solved by the inventor. A rejection is erroneous where there is a lack of any suggestion or motivation in the prior art to combine the specific components as combined by the Inventor so as to obtain the enhanced properties of the invention. In re Newell, 891 F.2d 899, 13 USPQ 2d 1248 (Fed. Cir. 1989).

The prior art must contain both the suggestion of the combination **and the expectation of the success in obtaining the results desired**. This must be in the prior art, not in Applicants' disclosure. In re Dow Chemical Co., 837 F.2d 469, 473, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988).

As the USPTO Board of Patent Appeals and Interferences stated in the case of Ex parte Obukowicz, 27 USPQ 2d 1063 (1992), a prior art reference that only gives general guidance and is not at all specific as to the particular form of the claimed invention and how to achieve it may make an approach "obvious to try" but does not make the claimed invention obvious, citing In re O'Farrell, 853 F.2d 894, 7 USPQ 1673, 1681 (Fed. Cir. 1988).

The type of disclosures in the cited references have been characterized by the USPTO Board of Appeals as merely a "shotgun type of disclosure" that cannot guide one skilled in the art to choose an Applicants' restricted class of components so as to make a particular composition obvious within the meaning of 35 U.S.C. 103 - Ex parte Strobel et al., 164 USPQ 358 (P. O. Bd. App. 1968).

In the present situation, there is nothing except Applicants' specification that teaches or suggests that low sulfur content (0.05% wt or less) liquid hydrocarbon middle distillate fuel oil can have its injector cleanliness property, superiorly enhanced by the specific ashless dispersant additive of a reaction product meeting the molar ratio and molecular weight requirements of the appealed claims.

Nothing in the three cited references teaches or proposes the specific combination of Applicants' claimed compositions with the specified ashless dispersant from among the innumerable possibilities. Thus, the three cited references could not have directed one skilled in the art to create compositions meeting the specific limitations of Applicants' claims. Ultradent Products, Inc. v. Life-Like Cosmetics, Inc., 127 F.3d 1065, 44 USPQ 2d 1336, 1341-42 (Fed. Cir. 1997). The references provide no motivation to one skilled in the art to arrive at the claimed invention with the specifically defined dispersants. In re Rouffet, 149 F.3d 1350, 47 USPQ 2d 1551, 1554 (Fed. Cir. 1996). Therefore, this rejection is legally deficient and cannot be sustained.

Applicants' specification and the Examples therein demonstrate that these distinctions over the prior art disclosures are critical and unobvious and produce dramatically more effective and unobviously enhanced engine and injector cleanliness in low sulfur middle distillate fuel oil compositions. Moreover, Applicants' specification and the Examples therein further demonstrate that such unobviously enhanced cleanliness results **are not obtained**:

(1) in high sulfur content fuel oils;

(2) with similar dispersant additives that differ only in the ratio of reactants, i.e., are at a ratio in excess of 4:3, namely at 1.5:1 or 2:1;

(3) with similar dispersant additives that are within the 4:3 to 1:10 molar ratio but where the molecular weight of the polybutenyl chain is outside the claimed 850 to 1150 range, i.e., with a molecular weight of the polybutenyl chain of 350, 570, 780 or 1300; and

(4) with similar dispersant additives where the polybutenyl chain is within the claimed 850 to 1150 molecular weight range and the ratio of reactants is within the 4:3 to 1:10 range, but the polyamine reactant has a structure outside the claimed structure

of Applicants' polyamine reactant (B), namely where the polyamine is 3-dimethylamino-propylamine.

These showings are discussed more fully in Argument 3 of this Brief.

ARGUMENT 2: THE PRIOR ART MUST MEET EVERY LIMITATION OF THE CLAIMS IN ORDER TO PROVIDE A BASIS FOR AN OBVIOUSNESS REJECTION UNDER 35 U.S.C. 103

Each and every claim limitation must be given consideration and effect in determining patentability. In re Glass, 472 F.2d 1388, 176 USPQ 489 (CCPA 1973); and In re Chandler, 254 F.2d 396, 117 USPQ 361 (CCPA 1958)

The PTO rejection fails to address the specific claim limitations of molar ratio and molecular weight requirements of the dispersant additive of the claims. The position of the USPTO that the reference disclosures disclose additives **"of the same nature as in the instant claims"** or **"the same type of ashless dispersant"** is legally insufficient and fails to address the specific claim limitations. A proper rejection under the requirements of 35 U.S.C. 103 requires the reference disclosure to meet the specific claim limitations, not to merely be of the "same type" or "same nature". No attempt is made by the PTO Examiner to show that the aforesaid claim limitations are taught by the prior art references. The prior art must make the **exact** dispersants obvious in the context of the claimed invention, and the cited prior art references do not do so here. Thus, the rejection is legally deficient and cannot be sustained.

ARGUMENT 3: APPLICANTS' SHOWING OF UNEXPECTEDLY SUPERIOR INJECTOR CLEANLINESS WITH THE CLAIMED COMPOSITIONS COMPARED TO PRIOR ART COMPOSITIONS ESTABLISH PATENTABILITY OF THE CLAIMS OVER THE PRIOR ART

Even though the reference disclosures fail to provide any basis for establishing *prima facie* for obviousness of Applicants' claimed invention under 35 U.S.C. 103, the data presented in Applicants' specification would overcome any such *prima facie*

case for obviousness (if one had been established) since the data shows the unexpectedly superior engine cleanliness property provided by the compositions of this invention containing the specified dispersant additive compared to similar compositions differing in the dispersant additive's molar ratio or reactants and/or molecular weight of the polyalkenyl chain thereof, differing in the sulfur content of the fuel oil and differing in the polyamine reactant (B). Such evidence, presented in the Examples of Applicants' specification, must be considered and given its proper weight. In re Soni, 54 F.3d 746, 750, 34 USPQ 2d 1684, 1687 (Fed. Cir. 1995). In re Dillon, 919 F.2d 688, 692-93, 16 USPQ 2d 1897, 1901 (Fed. Cir. 1990). *in banc, cert. denied*, 500 US 904 (1991). When properly considered, the unexpected, unobvious property establishes patentability of the appealed claims under 35 U.S.C. 103.

The demonstration of the unexpected properties of the claimed compositions compared to closely related compositions outside the scope of the claims is summarized as follows.

In Table 3 on page 21, Examples 1 and 2 (employing dispersant additive 1 of the present invention at treat levels of 250 and 200 ppmw, respectively) produce Fouling Indexes (FI's) of 12 and 15 in the low sulfur fuel. In contrast, Comparative Examples III and IV with the same dispersant of the invention, but in high sulfur fuel oil, produces FI's of 19 and 22. Additionally, the FI's values of 12 and 15 for Examples 1 and 2 in low sulfur fuels are significantly better than the FI results (24 and 31) for a comparative dispersant A (Examples Comp I and Comp II) in the low sulfur fuel oil.

In Table 4 on page 23, Examples 3 and 4 with dispersant additives 1 and 2 of this invention produce FI's of 12 and 12, respectively, whereas Examples Comp. XI, XII and XIII, which differ only in the molecular weight of the polybutenyl chain being outside the claimed 850 to 1150 range (i.e., at 780, 750 and 1300, respectively), produce FI's of 22, 19 and 26. Additionally, while Examples 3 and 4 both produce FI's of 12, similar dispersants in Comp. I and IX, but produced with coupling molar ratios of 1.5:1 and 2:1 (outside the claimed 4:3 to 1:10 range), produce FI's of 24 and 28. Also, while Examples 3 and 4 of the invention

produce FI's of 12, a similar dispersant but of a polyamine outside the claims (namely, DAP - i.e., 3-dimethyl-aminopropylamine) produces a FI of 25.

In Table 5 on page 26, it will be seen that Examples 5 and 6 with dispersant additives of the invention produce FI's of 24 and 0.6, respectively, whereas Example Comp. XIV with an additive similar to the Example 5 additive but produced with a coupling ratio of 1.5:1 (outside the claim range), gave a FI of 28, and Example Comp. XV with an additive similar to the Example 6 additive, but produced with a polybutenyl chain of molecular weight of only 350, resulted in such severe fouling that the injector needles stuck in the nozzles.

These examples demonstrate the inferior performance of the additives of the prior art disclosures for providing injector cleanliness as compared to the unexpectedly, unobviously superior cleanliness provided by the narrowly defined dispersant additives of the appealed claims in a low sulfur content middle distillate fuel oil.

Nothing in the cited references would suggest their modification to employ in combination, the bonding ratio of 4:3 to 1:10, a polyalkenyl chain of molecular weight of from 850 to 1150 and the specified polyamines in order to produce a detergent additive that exhibits significantly improved antifouling properties in low sulfur content middle distillate fuel oils. The prior art disclosure must teach the invention or motivate one skilled in the art to make the required modifications to arrive at the claimed invention. In re Carroll, 601 F.2d 1184, 1186, 202 USPQ 571, 572 (CCPA 1979); In re Clinton, 527 F.2d 1226, 1228, 188 USPQ 365, 367 (CCPA 1976). The prior art disclosure must be such that one of ordinary skill in the art would reasonably expect the method of the reference disclosure to be successful in producing the desired result. In re O'Farrell, supra. "Both the suggestion and expectation of success must be founded in the prior art, not in Applicant's disclosure." In re Dow Chemical Co., supra. Nothing in the cited prior art disclosures would suggest or teach one skilled in the art to expect Applicants' claimed additives to possess the unexpectedly superior cleanliness (antifouling) properties in low sulfur content middle distillate fuel oil compared to the

cleanliness (antifouling) properties of closely related but different dispersant additives as demonstrated in the afore-discussed comparative examples.

The Final Rejection erroneously contends that no factual evidence to provide objective evidence of unobviousness has been presented. Such a position is clearly erroneous. The data in the aforesaid comparative examples provides such objective factual evidence of unobviousness and establishes the patentability of the claimed invention.

The 35 U.S.C. 103 rejection of Claims 1 to 17 is therefore legally and factually deficient and cannot be maintained.

PRAYER FOR RELIEF

Reversal of the 35 U.S.C. 103 Final Rejection of Claims 1 to 17 over the three cited references and an indication of the patentability of said claims over these reference disclosures is respectfully solicited.

Respectfully submitted,

By: _____

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Date: January 7, 2000

APPENDIX

(9) APPEALED CLAIMS

A copy of the claims on appeal is set forth in this Appendix.

Claim 1. A fuel oil composition comprising a major proportion of a liquid hydrocarbon middle distillate fuel oil having a sulphur concentration of at most 0.05% by weight, and a minor proportion of a dispersant additive obtained by reacting, in a molar ratio A:B in the range 4:3 to 1:10, (A) a polyalkenyl derivative of monoethylenically unsaturated C_4-C_{10} dicarboxylic acid material in which the number average molecular weight (M_n) of the polyalkenyl chain is in the range from 850 to 1150 with (B) a polyamine of general formula

$$H_2N(CH_2)_m\text{-}[NH(CH_2)_m]_n\text{-}NH_2 \qquad (I)$$

wherein m is in the range from 2 to 4 and n is in the range from 1 to 6.

Claim 2. The fuel oil composition of Claim 1 wherein the polyalkenyl chain is derived from a polymer of at least one C_2-C_5 monoolefin.

Claim 3. The fuel oil composition of Claim 2 wherein the monoolefin is isobutylene.

Claim 4. The fuel oil composition of Claim 1 wherein n is in the range 1 to 3.

Claim 5. The fuel oil composition of Claim 2 wherein n is in the range 1 to 3.

Claim 6. The fuel oil composition of Claim 1 wherein the molar ratio A:B is in the range 6:5 to 1:2.

Claim 7. The fuel oil composition of Claim 2 wherein the molar ratio A:B is in the range 6:5 to 1:2.

Claim 8. The fuel oil composition of Claim 4 wherein the molar ratio A:B is in the range 6:5 to 1:2.

Claim 9. The fuel oil composition of Claim 1 wherein the amount of dispersant additive is in the range of from 10 to 400 ppmw active matter based on total composition.

Claim 10. The fuel oil composition of Claim 2 wherein the amount of dispersant additive is in the range of from 10 to 400 ppmw active matter based on total composition.

Claim 11. The fuel oil composition of Claim 4 wherein the amount of dispersant additive is in the range of from 10 to 400 ppmw active matter based on total composition.

Claim 12. The fuel oil composition of Claim 6 wherein the amount of dispersant additive is in the range of from 10 to 400 ppmw active matter based on total composition.

Claim 13. The fuel oil composition of Claim 1 wherein the amount of dispersant additive is in the range of from 40 to 200 ppmw active matter based on total composition.

Claim 14. The fuel oil composition of Claim 1 which additionally contains a lubricity additive in an amount in the range from 50 to 500 ppmw based on total composition.

Claim 15. A process for the preparation of the fuel oil composition of Claim 1 which comprises admixing the dispersant additive or an additive concentrate containing the dispersant additive with the fuel oil.

Claim 16. A process for the preparation of the fuel oil composition of Claim 5 which comprises admixing the dispersant additive or an additive concentrate containing the dispersant additive with the fuel oil.

Claim 17. A method of operating a compression-ignition engine which comprises introducing into the combustion chambers of said engine the fuel oil composition of Claim 1.